These amendments are made without prejudice and are not to be construed as abandonment of the previously claimed subject matter or agreement with any objection or rejection of record. In accordance with the requirements of 37 C.F.R. § 1.121, a marked up version showing the changes to the claims, is attached herewith as **Appendix A**. For the Examiner's convenience, a complete claim set of the currently pending claims is also submitted herewith as **Appendix B**.

REMARKS

Status of the Claims

Claims 32, 34-36, 41-42, 44-62, 120-121, 124-132, and 147-157 are pending with entry of this amendment, claims 31, 33, 37-40, 43, 63, and 105 being cancelled without prejudice to subsequent renewal. Claims 32, 34, 41, 51, 54-55, 57-58, 60, 62, 120, 124-125, 127-128, 130, 132, and 147 are amended herein. These amendments introduce no new matter. Support is replete throughout the specification. For example, support for the amendment to claims 41 and 51 are found at least in claim 43. Claims 32, 54-55, 57-58, 60, 120, 124-125, 127-128, 130, 132, and 147 have been amended to remove dependency from a cancelled claim. Claim 34 has been amended to incorporate the sequence identification number of the recited sequence. Claims 62 and 132 have been amended to correct typographical errors.

Please note that Applicants reserve the right to file subsequent applications claiming the canceled subject matter and the claim cancellations should not to be construed as abandonment of any presently or previously claimed subject matter or agreement with any objection or rejection of record.

Information Disclosure Statement

Applicants note with appreciation the Examiner's thorough consideration of the references cited in Information Disclosure Statements submitted on March 23, 2001 (six Forms 1449 and one form PTO-892) and on November 8, 2001 (one form 1449).

Applicants note, however, that an initialed copy of a single page from a three-page 1449 form submitted on March 23, 2001 was not received. This 1449 form lists references AA-CN; an

initialed copy of page 2 of that particular 1449 form, which lists references AY-BT, was not returned to Applicants. Applicants respectfully request an initialed & signed copy of this page indicating consideration of references AY-BT therein. A copy of the relevant 1449 page is provided for the Examiner's convenience. Duplicate copies of references AY-BT are also available, should the Examiner request them.

Objection to the Specification

The specification was objected to on the grounds that the continuing application data provided was incorrect, and that sequences recited on pages 3, 22, and 43 were not identified by sequence identification numbers (SEQ ID NOs). Applicants thank the Examiner for her careful review of the specification. The objection has been overcome by amending the specification to correct the continuing application data and to introduce SEQ ID NOs as suggested by the Examiner. Applicants also amended the specification at page 80 to introduce additional missing SEQ ID NOs. Accordingly, withdrawal of the objection is respectfully requested.

Objection to the Claims

Claims 31-33 were objected to as depending from a cancelled claim. Claims 31 and 33 have been cancelled, and claim 32 as amended no longer depends from a cancelled claim, rendering the objection moot. Claim 34 has been amended to include the SEQ ID NO of the recited sequence as requested by the Examiner. Accordingly, withdrawal of the objection is respectfully requested.

35 U.S.C. §102(b)

Claims 31 and 37-40 were rejected under 35 U.S.C. §102(b) as allegedly anticipated by Stabinsky, U.S. Patent 4,695,623 (hereinafter "Stabinsky"), and by Blatt *et al.*, J. Interferon and Cytokine Res. (1996), vol. 16, pages 489-499 (hereinafter "Blatt *et al.*"). This rejection is moot in light of the cancellation of claims 31 and 37-40.

35 U.S.C. §103(a)

Claims 31-63, 105, 120, 121, 124-132, and 147-157 were rejected under 35 U.S.C §103(a) as allegedly unpatentable over Stabinsky (cited above). Claims 31-53, 60-63, 105, 120, 121, 130, 131,

and 147-157 were rejected under 35 U.S.C §103(a) as allegedly unpatentable over Blatt *et al.* (cited above). The rejection of claims 31, 33, 37-40, 43, 63, and 105 has been mooted by cancellation of those claims without prejudice. The rejection of the remaining claims is respectfully traversed, as follows.

In support of the rejection over Stabinsky, the Examiner noted: "Stabinsky teaches a consensus interferon sequence. This sequence was derived by a comparison of the known interferon alpha sequences. In Figure 2, Stabinsky presents an alignment of these sequences and the derived consensus sequence." *Office Action, page 3.*

In support of the rejection over Blatt *et al.*, the Examiner noted that "this alignment [in Stabinsky] is more clearly shown by Blatt *et al.*, which teaches a similar comparison in Table 1." *Id.*

Based on the above, it was the Examiner's position that:

> Nearly all of the sequences claimed in the instant application can be derived by taking the sequence of consensus interferon and substituting a corresponding amino acid or amino acids from one of the sequences from which it was derived. The sequence of claim 34 does include possible amino acid substitutions not found in the sequences taught by Stabinsky or Blatt et al. However, these substitutions are optional; each set of alternatives includes one or more amino acids found in the corresponding position of a naturally occurring interferon alpha. Further, Stabinsky teaches in column 33, lines 45-47, that "consensus human leukocyte interferon will ordinarily include all known common amino acids of all subtypes", in column 34, lines 11-16 that "polypeptides lacking one of *[sic]* more internal or terminal residues or including internal or terminal residues having no counterpart in any subtype would be considered analogs of human consensus interferon alpha", and in, column 42, line 10, a "genus". Thus, Stabinsky clearly contemplates variations of the consensus sequence taught in Figure 2.

Id.

The Examiner further concluded:

> Thus it would have been *prima facie* obvious to one of ordinary skill to take the known consensus sequence and change selected to *[sic]* amino acids to one of the other options indicated by the alignment of sequences shown in Figure 2 of Stabinsky and Table 1 of Blatt *et al.* with the expectation that the resulting polypeptide would function as an interferon alpha. One of ordinary skill would further have expected some of these options to have enhanced activity, since such enhancement is taught by Stabinsky.

Office Action, page 4.

Applicants respectfully submit that the Office Action has not established a *prima facie* case of obviousness of the claims based on the teachings of either Stabinsky, taken alone, or of Blatt *et al.*, taken alone. According to the MPEP at §2143, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Furthermore, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Of the pending rejected claims, claims 32, 34, 41, 51, and 149 are independent. Claim 32, as previously drafted, provides a polypeptide comprising a sequence selected from SEQ ID NO:36 to SEQ ID NO:70 and SEQ ID NO:79 to SEQ ID NO:85.

Claim 34, as previously drafted, provides a polypeptide comprising the amino acid sequence CDLPQTHSLG-X_{11}-X_{12}-RA-X_{15}-X_{16}-LL-X_{19}-QM-X_{22}-R-X_{24}-S-X_{26}-FSCLKDR-X_{34}-DFG-X_{38}-P-X_{40}-EEFD-X_{45}-X_{46}-X_{47}-FQ-X_{50}-X_{51}-QAI-X_{55}-X_{56}-X_{57}-HE-X_{60}-X_{61}-QQTFN-X_{67}-FSTK-X_{72}-SS-X_{75}-X_{76}-W-X_{78}-X_{79}-X_{80}-LL-X_{83}-K-X_{85}-ST-X_{88}-L-X_{90}-QQLN-X_{95}-LEACV-X_{101}-Q-X_{103}-V-X_{105}-X_{106}-X_{107}-X_{108}-TPLMN-X_{114}-D-X_{116}-ILAV-X_{121}-KY-X_{124}-QRITLYL-X_{132}-E-X_{134}-KYSPC-X_{140}-WEVVRAEIMRSFSFSTNLQKRLRRKE, or a conservatively substituted variation thereof; wherein X_{11} is N or D; X_{12} is R, S, or K; X_{15} is L or M; X_{16} is I, M, or V; X_{19} is A or G; X_{22} is G or R; X_{24} is I or T; X_{26} is P or H; X_{34} is H, Y or Q; X_{38} is F or L; X_{40} is Q or R; X_{45} is G or S; X_{46} is N or H; X_{47} is Q or R; X_{50} is K or R; X_{51} is A or T; X_{55} is S or F; X_{56} is V or A; X_{57} is L or F; X_{60} is M or I; X_{61} is I or M; X_{67} is L or F; X_{72} is D or N; X_{75} is A or V; X_{76} is A or T; X_{78} is E or D; X_{79} is Q or E; X_{80} is S, R, T, or N; X_{83} is E or D; X_{85} is F or L; X_{88} is E or G; X_{90} is Y, H, N; X_{95} is D, E, or N; X_{101} is I, M, or V; X_{103} is E or G; X_{105} is G or W; X_{106} is V or M; X_{107} is E, G, or K; X_{108} is E or G; X_{114} is V, E, or G; X_{116} is S or P; X_{121} is K or R; X_{124} is F or L; X_{132} is T, I, or M; X_{134} is K or R; and X_{140} is A or S.

Claim 41, as previously drafted, provides a polypeptide comprising an amino acid sequence comprising at least 50 contiguous amino acids of any one of SEQ ID NOS:36-70, the amino acid sequence comprising one or more of amino acids Ala19, (Tyr or Gln)34, Gly37, Phe38, Lys71, Ala76, Tyr90, Ile132, Arg134, Phe152, Lys160, and Glu166, wherein the numbering of the amino acids corresponds to that of SEQ ID NO:36.

Claim 51, as previously drafted, provides a polypeptide comprising an amino acid sequence comprising at least 155 contiguous amino acids of any one of SEQ ID NOS:36-70, the isolated or recombinant polypeptide comprising amino acids Lys160 and Glu166, wherein the numbering of the amino acids corresponds to that of SEQ ID NO:36.

Claim 149, as previously drafted, provides a polypeptide comprising a sequence having at least 96% sequence identity over the entire length of a sequence selected from the group consisting of: SEQ ID NO:40, SEQ ID NO:41, SEQ ID NO:42, SEQ ID NO:45, SEQ ID NO:52, SEQ ID NO:54, and a fragment thereof which exhibits an antiproliferative activity in a human Daudi cell line-based cell proliferation assay or an antiviral activity in a human WISH cell/EMCV-based assay.

No suggestion to modify the sequences disclosed in Stabinsky or in Blatt et al.

Applicants submit that, at a minimum, the Office Action has not pointed to any teaching or suggestion in either Stabinsky (taken alone), or in Blatt *et al.* (taken alone), which would lead one of skill to modify the teachings of either of these individual references to arrive at any claimed polypeptide, as previously drafted or as amended herein. More specifically, the Office Action has failed to demonstrate with any particularity how one of skill would use the teachings of Stabinsky, including Figure 2 which shows an alignment of 13 individual human interferon alpha sequences plus a single "consensus" interferon sequence, to arrive at the sequence of any particular polypeptide claimed by the Applicants. Likewise, the Office Action has failed to show with any particularity how one of skill would use the teachings of Blatt *et al.*, including Table 1 which shows an alignment of 21 individual human interferon alpha sequences plus the same single "consensus" interferon sequence, to arrive at the sequence of any particular polypeptide claimed by the Applicants. Instead, it was merely asserted in the Office Action that:

> [n]early all of the sequences claimed in the instant application can be derived by taking the sequence of consensus interferon and substituting a corresponding amino acid or amino acids from one of the sequences from which it was derived.

Office Action, page 3.

However, the Office Action has not pointed to any suggestion in either Stabinsky or in Blatt *et al.* as to the desirability of modifying either individual reference in a manner which would result in any claimed polypeptide. Thus, Applicants respectfully submit that, for at least these reasons, a *prima facie* case of obviousness has not been established over Stabinsky or over Blatt *et al.*

No motivation provided in either cited reference to select the claimed sequences

Applicants respectfully submit that the Office Action has not sufficiently established how one of skill would have been motivated to select a polypeptide as defined by claim 32, 34, 41, 51, or 149, or any claim dependent thereon, based on the teachings of either Stabinsky or of Blatt *et al.* In the Office Action at page 4 lines 8-13, it was alleged that

> ...it would have been *prima facie* obvious to one of ordinary skill to take the known consensus sequence and change selected to [sic] amino acids to one of the other options indicated by the alignment of sequences shown in Figure 2 of Stabinsky and Table 1 of Blatt *et al.* with the expectation that the resulting polypeptide would function as an interferon alpha. One of ordinary skill would further have expected some of these options to have enhanced activity, since such enhancement is taught by Stabinsky.

In support of this assertion, the Examiner further stated that "Stabinsky additionally teaches antiviral activity and increased activity" (citing Stabinsky, column 41, lines 13-39 and column 42, lines 1-6, *i.e.*, Example 12). *Office Action, page 4.*

Applicants note that Example 12 of Stabinsky cited above provides a table (Table XII) which shows a comparison of antiviral activities of a natural (buffy coat) interferon and four polypeptides designated IFN-αF_1, IFN-αF_2, IFN-Con_1, and IFN-Con_2. There is no guidance to be found in Example 12 which would motivate one of skill to "take the known consensus sequence and change selected ...amino acids to one of the other options indicated by the alignment of sequences shown in Figure 2 of Stabinsky and Table 1 of Blatt *et al.*" -- on the contrary, Example 12 of Stabinsky provides no guidance or suggestion as to which of the amino acids should be "selected", or to which

of the "other options" the selected amino acid(s) should be changed, to make any other polypeptide with antiviral activity. Furthermore, inspection of Table XII in Example 12 of Stabinsky shows that only two of the four polypeptides shown, IFN-Con_1 and IFN-Con_2, exhibited any sort of "enhanced activity" compared to the natural interferon. Example 12 of Stabinsky provides no guidance to how one of ordinary skill would make any polypeptide, apart from the four polypeptides specifically disclosed in that Example, with any reasonable expectation that such a polypeptide would function as an interferon-alpha, much less exhibit "enhanced activity".

The Office Action has not pointed to any guidance or suggestion in either Stabinsky or in Blatt *et al.* which would motivate one of skill to select, from a multitude of potential combinations of amino acid residues, any particular combination of amino acid residues which would result in any polypeptide claimed by the Applicants. One of ordinary skill, relying on the teachings of Stabinsky or of Blatt *et al.,* would at best be forced to test each of a multitude of possible amino acid substitutions until one possibly arrived at a successful result. Stabinsky provides no guidance or direction on which particular amino acid residues could be modified, out of the numerous possibilities presented in Figure 2 in the manner suggested by the Examiner, to produce a polypeptide claimed by the Applicants. Likewise, Blatt *et al.* provides no guidance direction on which particular amino acid residues could be modified, out of the numerous possibilities presented in Table 1 in the manner suggested by the Examiner, to produce a polypeptide claimed by the Applicants. As a more specific example, the Office Action has not pointed to any teaching or suggestion in Stabinsky, or in Blatt *et al.,* which would motivate one of ordinary skill to select the particular combination of amino acids which form SEQ ID NO:41, the species of polypeptide elected for initial examination in this application.

In summary, the Office Action has not provided any basis in either cited reference, alone or in combination, to modify the teachings of either of the individual references to arrive at any claimed polypeptide. The Office Action has furthermore not pointed to any teaching or suggestion in either of the cited references which would motivate one of skill, based on the teachings of those references, to select any particular polypeptide claimed by the Applicants. For at least the reasons discussed above, Applicants respectfully submit that a *prima facie* case of obviousness has not been

established over Stabinsky or over Blatt *et al.* Accordingly, Applicants respectfully request withdrawal of the §103(a) rejection of pending claims 32, 34-36, 41, 42, 44-62, 120, 121, 124-132, and 147-157 over Stabinsky, and withdrawal of the §103(a) rejection of pending claims 32, 34-36, 41, 42, 44-53, 60-62, 120, 121, 130-131, and 147-157 over Blatt *et al.*

35 U.S.C. §112, First Paragraph

A. Written Description

Claims 31, 32, 37, 40, 41, 45-49, 51, 52, 54-63, 105, and 124-132 were rejected under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter which was not adequately described in the specification. Specifically, the Examiner alleged that the claims encompass a genus that includes molecules of undefined composition and function, and that, without a functional limitation or defined structural characteristics, one of skill would not be able to recognize the individual members of the genus. The rejection is respectfully traversed in part and overcome in part as follows.

Independent claim 32 is directed to a polypeptide comprising a sequence selected from SEQ ID NO:36 to SEQ ID NO:70 and SEQ ID NO:79 to SEQ ID NO:85. As noted in the specification on page 21 lines 13-17, polypeptides comprising the sequences SEQ ID NO:36-70 exhibit at least antiproliferative activity in a human Daudi cell line-based assay. As further noted in the specification on page 21 lines 13-17, polypeptides comprising the sequences SEQ ID NO:79-85 exhibit at least antiviral activity in a murine cell /EMCV-based assay. Thus, this claim is directed to polypeptides with both defined composition and function. Applicants therefore respectfully request that the rejection of claim 32 under §112, first paragraph be withdrawn.

To expedite prosecution, claims 31, 37, 40, 63, and 105 have been cancelled without prejudice, independent claim 41 has been amended to incorporate the activity limitation of claim 43 from which it depends, and independent claim 51 has been amended to include the activity limitation of claim 43. Claims 41 and 51 as amended require that the claimed polypeptides exhibit antiproliferative activity in a human Daudi cell line-based cell proliferation assay or antiviral activity in a human WISH cell/EMCV-based assay. Claims 45-49 and 54-62 incorporate this limitation

owing to their dependence from claim 41 or 51. Claims 124-132 have been amended to depend directly or indirectly from independent claim 149 which is free of this rejection.

B. Enablement

Claims 31, 32, 37, 40, 41, 45-49, 51, 52, 54-63, 105, and 124-132 were rejected under 35 U.S.C. §112, first paragraph, in that the specification allegedly does not provide enablement for sequences comprising fragments, molecules identified by hybridization, or sequences comprising entities identified by antibodies, absent functional limitations. As noted above, to expedite prosecution, claims 31, 37, 40, 63, and 105 have been cancelled without prejudice, rendering the rejection of these claims moot. The rejection of the remaining claims is respectfully traversed in part and overcome in part as follows.

Applicants submit that claim 32, directed to polypeptides comprising a sequence selected from SEQ ID NO:36 to SEQ ID NO:70 and SEQ ID NO:79 to SEQ ID NO:85, is fully enabled by the specification, at least for the reasons discussed above.

Furthermore, Applicants submit that the amendment to independent claims 41 and 51, as discussed above, overcomes this rejection. Claims 45-49 and 54-62 are free of this rejection owing in part to their dependence from claim 41 or 51. Claims 124-132 have been amended to depend directly or indirectly from independent claim 149 which is free of this rejection.

In light of the above, Applicants submit that the rejection is overcome, and respectfully request the rejection of pending claims 32, 41, 45-49, 51, 52, 54-62, and 124-132 under 35 U.S.C. §112, first paragraph, be withdrawn.

35 U.S.C. §112, Second Paragraph

Claim 37 was rejected under 35 U.S.C. §112, second paragraph, as allegedly reciting an improper Markush group. To expedite prosecution, claim 37 has been cancelled without prejudice, rendering this rejection moot.

Claims 31, 33, 37-40, 54-62 and 120-148 were rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite in the recitation of "highly stringent conditions". To expedite prosecution, claims 31, 33 and 37-40 have been cancelled without prejudice, claims 54-55, 57-58,

60, and 120 have been amended to remove dependence from cancelled claim 37, and claims 124, 125, 127, 128, 130, and 147 have been amended to remove dependence from cancelled claim 31. By virtue of the above amendments, claims 56, 59, 61-62, 121, 126, 129, 131, 132, and 148 no longer depend from claims 31 or 37. Applicants submit that the rejection is overcome, and respectfully request that the 35 U.S.C. §112, second paragraph rejection be withdrawn.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If a telephone conference would expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (650) 298-5452.

Respectfully submitted,

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APPENDIX A

"MARKED UP" CLAIMS ILLUSTRATING THE AMENDMENTS MADE TO THE CLAIMS OF 09/685,189 WITH ENTRY OF THIS AMENDMENT

insertions are indicated by double underlining, deletions are indicated by ~~strikethrough~~

31. (Cancelled)

32. (Amended) ~~The~~ An isolated or recombinant polypeptide ~~of claim 31,~~ comprising a sequence selected from the group consisting of: SEQ ID NO:36 to SEQ ID NO:70 ~~or~~ and SEQ ID NO:79 to SEQ ID NO:85.

33. (Cancelled)

34. (Twice Amended) An isolated or recombinant polypeptide, comprising:

the amino acid sequence: CDLPQTHSLG-X_{11}-X_{12}-RA-X_{15}-X_{16}-LL-X_{19}-QM-X_{22}-R-X_{24}-S-X_{26}-FSCLKDR-X_{34}-DFG-X_{38}-P-X_{40}-EEFD-X_{45}-X_{46}-X_{47}-FQ-X_{50}-X_{51}-QAI-X_{55}-X_{56}-X_{57}-HE-X_{60}-X_{61}-QQTFN-X_{67}-FSTK-X_{72}-SS-X_{75}-X_{76}-W-X_{78}-X_{79}-X_{80}-LL-X_{83}-K-X_{85}-X_{86}-ST-X_{88}-L-X_{90}-QQLN-X_{95}-LEACV-X_{101}-Q-X_{103}-V-X_{105}-X_{106}-X_{107}-X_{108}-TPLMN-X_{114}-D-X_{116}-ILAV-X_{121}-KY-X_{124}-QRITLYL-X_{132}-E-X_{134}-KYSPC-X_{140}-WEVVRAEIMRSFSFSTNLQKRLRRKE (SEQ ID NO:71), or a conservatively substituted variation thereof;

wherein X_{11} is N or D; X_{12} is R, S, or K; X_{15} is L or M; X_{16} is I, M, or V; X_{19} is A or G; X_{22} is G or R; X_{24} is I or T; X_{26} is P or H; X_{34} is H, Y or Q; X_{38} is F or L; X_{40} is Q or R; X_{45} is G or S; X_{46} is N or H; X_{47} is Q or R; X_{50} is K or R; X_{51} is A or T; X_{55} is S or F; X_{56} is V or A; X_{57} is L or F; X_{60} is M or I; X_{61} is I or M; X_{67} is L or F; X_{72} is D or N; X_{75} is A or V; X_{76} is A or T; X_{78} is E or D; X_{79} is Q or E; X_{80} is S, R, T, or N; X_{83} is E or D; X_{85} is F or L; X_{86} is S; X_{88} is E or G; X_{90} is Y, H, N; X_{95} is D, E, or N; X_{101} is I, M, or V; X_{103} is E or G; X_{105} is G or W; X_{106} is V or M; X_{107} is E, G, or K; X_{108} is E or G; X_{114} is V, E, or G; X_{116} is S or P; X_{121} is K or R; X_{124} is F or L; X_{132} is T, I, or M; X_{134} is K or R; and X_{140} is A or S.

37. (Cancelled)

38. (Cancelled)

39. (Cancelled)

40. (Cancelled)

41. (Amended) An isolated or recombinant polypeptide, comprising:

an amino acid sequence comprising at least 50 contiguous amino acids of any one of SEQ ID NOS:36-70, the amino acid sequence comprising one or more of amino acids Ala19, (Tyr or Gln)34, Gly37, Phe38, Lys71, Ala76, Tyr90, Ile132, Arg134, Phe152, Lys160, and Glu166, wherein the numbering of the amino acids corresponds to that of SEQ ID NO:36, which polypeptide exhibits an antiproliferative activity in a human Daudi cell line-based cell proliferation assay or an antiviral activity in a human WISH cell/EMCV-based assay.

43. (Cancelled)

51. (Amended) An isolated or recombinant polypeptide comprising an amino acid sequence comprising at least 155 contiguous amino acids of any one of SEQ ID NOS:36-70, the isolated or recombinant polypeptide comprising amino acids Lys160 and Glu166, wherein the numbering of the amino acids corresponds to that of SEQ ID NO:36, which polypeptide exhibits an antiproliferative activity in a human Daudi cell line-based cell proliferation assay or an antiviral activity in a human WISH cell/EMCV-based assay.

54. (Amended) The polypeptide of claim 32, 34, ~~37,~~ 41, or 51, further comprising a secretion/localization sequence.

55. (Amended) The polypeptide of claim 32, 34, ~~37,~~ 41, or 51, further comprising a polypeptide purification subsequence.

57. (Amended) The polypeptide of claim 32, 34, ~~37,~~ 41, or 51, further comprising a Met at the N-terminus.

58. (Amended) The polypeptide of claim 32, 34, ~~37,~~ 41, or 51, comprising a modified amino acid.

60. (Amended) A composition comprising the polypeptide of claim 32, 34, ~~37,~~ 41, or 51 and an excipient.

62. (Amended) A composition comprising the polypeptide of claim 58 ~~in~~ and a pharmaceutically acceptable excipient.

63. (Cancelled)

105. (Cancelled)

120. (Amended) The polypeptide of claim 32, 34, ~~37,~~ 41, or 51, said polypeptide having an increased growth inhibition activity against a population of cancer cells relative to the inhibition activity of human interferon-alpha 2a against the population of cancer cells.

124. (Amended) The polypeptide of claim ~~31~~ 149, further comprising a secretion/localization sequence.

125. (Amended) The polypeptide of claim ~~31~~ 149, further comprising a polypeptide purification subsequence.

127. (Amended) The polypeptide of claim ~~31~~ 149, further comprising a Met at the N-terminus.

128. (Amended) The polypeptide of claim ~~31~~ 149, comprising a modified amino acid.

130. (Amended) A composition comprising the polypeptide of claim ~~31~~ 149, and an excipient.

132. (Amended) A composition comprising the polypeptide of claim 128 ~~in~~ and a pharmaceutically acceptable excipient.

147. (Amended) The polypeptide of claim ~~31~~ 149, said polypeptide having an increased growth inhibition activity against a population of cancer cells relative to the inhibition activity of human interferon-alpha 2a against the population of cancer cells.